



Our Docket No: 67228-274933 (f/k/a 19059.010)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard J. BACON

Application No: 09/912,078

Filed: July 24, 2001

For: CREATING IMBALANCED THRUST IN  
A CENTER LINE MOUNTED MULTI-  
ENGINE JET AIRCRAFT  
CONFIGURATION AND A METHOD OF  
USING IMBALANCED THRUST

Examiner: Semunegus, Lulit

Art Unit: 3641

**APPEAL BRIEF**  
**IN SUPPORT OF APPELLANT'S APPEAL**  
**TO THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Sir:

Applicant (hereafter "Appellant") hereby submits this Brief in triplicate in support of its appeal from a decision by the Examiner, mailed July 15, 2003, in the above-referenced application. Appellant respectfully requests consideration of this Appeal by the Board of Patent Appeals and Interferences (the "Board") for allowance of the above-captioned patent application.

On January 15, 2004, the Appellant filed a Notice of Appeal (via facsimile) for the present application. The claims of the present application were finally rejected by the Examiner in a final Office Action mailed July 15, 2003 (the "**Final Office Action**"). Therefore, this is a proper Appeal and Appellant's Brief in support of this Appeal follows.

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Docket No.: 67228-274933  
Application No.: 09/912,078

### **REAL PARTY IN INTEREST**

The real party in interest in this Appeal is the sole inventor, Richard J. Bacon, by virtue of the fact that no assignment of rights to the invention disclosed in the present application has yet been made or recorded.

### **RELATED APPEALS AND INTERFERENCES**

There are no known appeals or interferences related to this Appeal.

### **STATUS OF CLAIMS**

Claims 1, 3-10 and 34-45 are currently pending in the above-referenced application. In the Final Office Action, the Examiner (1) rejected claims 1, 3, 7, 9-10, 34-36, 38-43 and 45 under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 5,480,107 of Bacon (hereafter “**Bacon**”); and (2) rejected the remaining pending claims, i.e., claims 4-6, 8, 37 and 44 under 35 U.S.C. §103(a) as being unpatentable over Bacon in view of “applicant’s own disclosure” (hereafter “**AOD**”).

Claims 1, 3-10 and 34-45 as set forth in the Amendment and Response to Office Action mailed April 21, 2003, are the subject of this Appeal. The Appendix of Claims below sets forth a copy of the appealed claims.

## **STATUS OF AMENDMENTS**

No amendment has been filed subsequent to the Examiner's Final Office Action which finally rejected all pending claims. A copy of all claims on appeal is attached hereto in the Appendix of Claims.

It should be noted that an erroneous Notice of Abandonment was mailed on March 23, 2004 indicating no reply had yet been received in response to the Final Office Action. The undersigned submitted a Petition to Withdraw Holding of Abandonment on April 8, 2004 accompanied by a copy of the transmittal form, Notice of Appeal, Petition for 3-month Extension of Time, Fee Transmittal, Credit Card Payment Form, Change of Correspondence Address, the fax confirmation report, and the USPTO Auto-Reply confirming timely receipt of the foregoing documents on January 15, 2004. No response has yet been received regarding this request to review the holding of abandonment. Meanwhile, our last review of status information regarding the above-captioned patent application on the Patent Application Information Retrieval (PAIR) web site noted the status as "Abandoned – Failure to Respond to an Office Action."

## **SUMMARY OF INVENTION**

The above-captioned patent application generally relates to improvements to the multi-engine jet aircraft configuration in which jet engines are centerline mounted as shown in Figure A-8. While the claimed configuration of jet engines are centerline mounted as disclosed in Bacon, in one embodiment of the present invention, the thrust differential between the jet engines is created as a result of a different power setting on one of the two otherwise equally powered jet engines (see Spec. ¶¶ [0009], [0010], [0012], [0014] and [0017] ). For enhanced

safety advantages, according to one embodiment, the thrust differential between the jet engines is achieved without staging an engine. One way of achieving a thrust differential between a pair of jet engines which are otherwise the same is by “down-rating” or otherwise reducing an engine from its maximum thrust (see Spec. ¶ [0011]). Therefore, instead of staging one of two different sized engines during one or more of the flight segments to create a differential thrust as suggested in Bacon, both engines may be left running, albeit at different power settings (see Spec. ¶ [0014]). Advantageously, in this manner, staging issues and concerns with respect to whether an engine intentionally shut down during flight can be restarted “cold” when needed are avoided (see Spec. ¶ [0027]).

#### **ISSUES**

- A. Did the Examiner improperly reject claims 1, 3, 7, 9-10, 34-36, 38-43 and 45 under 35 U.S.C. § 102(b) by attributing capabilities and functionality to Bacon that are clearly unsupported by and outside of the scope and contemplation of its written description?
- B. Did the Examiner improperly rely on Appellant’s own disclosure to reject claims 4-6, 8, 37 and 44 under 35 U.S.C. § 103(a)?

#### **GROUPING OF CLAIMS**

In view of the issues presented and for purposes of this Appeal, Appellant groups the claims on appeal as follows:

- Group I: Claims 1, 3 and 45
- Group II: Claims 4, 6-7, 9-10, 36, 42 and 44
- Group III: Claims 5, 8, 37 and 43

Group IV: Claims 34, 35 and 38-41.

With respect to the claims of Group IV, the claims do not stand or fall together. In accordance with 37 C.F.R. § 1.192 (c)(7), the Appellant explains why the claims of the group are believed to be separately patentable.

#### ARGUMENT

**A. The Examiner Improperly Rejected Claims 1, 3, 7, 9-10, 34-36, 38-43 and 45 under 35 U.S.C. § 102(b) by Attributing to Bacon Functionality that is Neither Required, Taught, nor Reasonably Suggested by the Disclosure of Bacon.**

In the Final Office Action, the Examiner incorrectly rejected claims 1, 3, 7, 9-10, 34-36, 38-43 and 45 under 35 U.S.C. § 102(b) as being anticipated by Bacon. “A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994). Applying this standard for anticipation reveals that the Bacon reference has been misunderstood, mischaracterized and/or misapplied by the Examiner. Careful analysis illustrates Bacon does not disclose each and every limitation expressly recited and required by the claims.

Bacon generally relates to an aircraft configuration including centerline-mounted main ***engines that have differing maximum thrust capabilities as a result of being unequally powered.*** For example, Bacon discloses a primary main engine, e.g., a Garrett-manufactured 3,500 pound thrust engine, having a substantially greater thrust than a secondary main engine, e.g., a Williams/Rolls Royce-manufactured 1,900 pound thrust engine (see Bacon at Col. 9, 11.

45-61). There is no teaching or suggestion in Bacon that the desired thrust differential could be created in the context of two equally powered engines by a different power setting on one of the two otherwise equally powered engines (e.g., down-rating or otherwise limiting the maximum thrust capability of one of the two engines). Rather, according to Bacon, the thrust differential is created simply by one engine being larger (e.g., higher powered) than the other (see, e.g., Bacon at Col. 9, ll. 45-61) or by “staging” (i.e., shutting down) one of the engines during one or more flight segments or phases of operation (see, e.g., Bacon at Col. 7, ll. 47-67). Moreover, Bacon does not contemplate and has no need for “down-rating” or otherwise limiting the maximum thrust capability of an engine. There is no apparent reason for Bacon to even have considered the notions of “down-rating” or other forms of limiting maximum thrust capability. As a result of the simplifying assumptions made by Bacon (e.g., the use of unequally powered engines), Bacon had no need for employing “down-rating” techniques or other mechanisms for limiting the maximum thrust capability of an engine.

As evidenced by the prosecution history, the Examiner has incorrectly attributed teachings to Bacon that are clearly absent from the disclosure of Bacon and not contemplated by the disclosure of Bacon. The Examiner then proceeded to use such attributed teachings to find anticipation under 35 U.S.C. § 102(b). For example, in the Final Office Action at page 3, the Examiner indicates the limitation of “[said] thrust differential created by a different power setting on one of two otherwise equally powered [jet] engines” is taught by Bacon at “(col. 6, lines 49-56).” In order to clearly illustrate the misapplication of Bacon with respect to the above-noted limitation, the undersigned has reproduced the portion of Bacon relied upon by the Examiner below:

...the first main engine has a higher thrust than the second main engine. The first main engine 12 will sometimes be referred to herein as the “primary” or “overbalanced” main engine. The second main engine 14 likewise has adequate thrust to operate the aircraft 18 safely in the event of primary engine failure. The second main 14 engine will sometimes be referred to herein as the “secondary” or “conventional” main engine.

It is respectfully submitted that neither this portion of Bacon nor any other portion of Bacon contemplate, teach or reasonably suggest (1) creating a thrust differential “by a different power setting” on one of the two jet engines; or (2) utilizing two “equally powered jet engines.”

Rather, the portion of Bacon relied upon simply teaches utilizing two jet engines that meet a certain minimum standard, e.g., adequate thrust to serve as a “main” engine. Having illustrated the type of misunderstanding, mischaracterization and/or misapplication of Bacon sought to be remedied by this Appeal, the undersigned will now address the claim groups individually.

With respect to claim Group I, the Examiner’s reliance on Bacon as an anticipatory references is thought to be improper as Bacon does not contemplate, teach or reasonably suggest at least the limitations discussed above relating to “said thrust differential created by a *different power setting* on one of two otherwise *equally powered jet engines*” (emphasis added) (see claim 1, element (e) and claim 45, element (d)). For at least the reasons set forth above, claims 1 and 45 are distinguishable over Bacon.

With respect to the claims of claim Group II, claims 4, 7, 9-10, 36 and 42 all expressly require a second engine to have a particular thrust capability (e.g., lesser maximum thrust) relative to a first engine as a result of *limiting the maximum thrust capability* of the second engine. The Examiner’s explanation for his § 102(b) rejection does not address this expressly recited claim limitation of “limiting ... maximum thrust capability” of a particular engine. As a

result, *the Examiner has not even presented a prima facie case of anticipation*. In any event, there is no contemplation, teaching or suggestion with respect to limiting the maximum thrust capability of an engine in the disclosure of Bacon. As explained above, in light of the simplifying assumptions made by Bacon (e.g., different and unequally powered engines), there is no apparent motivation to even consider a mechanism for limiting the maximum thrust of an engine – nor has the Examiner identified such motivation or suggestion. For at least these reasons, claims 4, 7, 9-10, 36 and 42 are distinguishable over Bacon.

With respect to the claims of claim Group III, only dependent claim 43 falls within those claims rejected as being anticipated by Bacon. *Claim 43 expressly requires “down-rating”* of the second jet engine to limit the second jet engine’s maximum thrust capability. Notably, the Examiner’s explanation for his § 102(b) rejection does not address this expressly recited claim limitation. As a result, *the Examiner, again, has failed to present a prima facie case of anticipation*. In any event, there is no contemplation, teaching or suggestion with respect to “down-rating” in the disclosure of Bacon. As explained above, given the simplifying assumptions made by Bacon (e.g., different and unequally powered engines), there was no motivation to even consider the concept of “down-rating.” For at least these reasons, claim 43 is distinguishable over Bacon.

With respect to claim Group IV, each of claim 34 and 38-41 expressly require “a means for creating an engine thrust differential between the two or more jet engines during one or more flight segments in which the two or more jet engines all remain operating.” This limitation is unquestionably written in means-plus-function form. Therefore, the means is necessarily limited to the corresponding structure recited in the specification for performing the recited function and



equivalents of the corresponding structure. Structure recited in the specification for “creating an engine thrust differential ... during one or more flight segments in which the two or more jet engines all remain operating” includes *engines of identical maximum thrust potential, one of which is down-rated* beneath its maximum thrust potential (see, e.g., Spec. ¶ [0011]). As explained above, Bacon discloses engines that have differing maximum thrust capabilities as a result of being unequally powered and as a result of “staging” one of the engines. Such teaching does not anticipate the use of engines of “identical maximum thrust potential” or the use of “down-rating” to achieve the desired thrust differential. Meanwhile, the concept of “staging” as disclosed in Bacon is thought to be related to operation of the engines rather than as a result of specific structure. Consequently, the teaching in Bacon regarding staging one of the engines during one or more flight segments or phases of operation is not thought to be relevant to patentability of the claims of Group IV. Importantly, however, this does not imply the Appellant believes staging is not encompassed by the claims of Group IV as it is certainly possible to stage either the non-down-rated or the down-rated engine. Consequently, to the extent the Examiner is equating the operational concept of staging two unequally powered engines with the recited means for “creating an engine thrust differential ... during one or more flight segments in which the two or more jet engines all remain operating,” this is thought to be improper and not relevant to the use of engines of identical maximum thrust potential, one of which is down-rated. For at least these reasons, claims 34 and 38-41 are thought to be distinguishable over Bacon.

With respect to claim 35 it is distinguishable over Bacon for the reasons set forth above with reference to claims 34 and 38-41. Additionally, however, claim 35 expressly requires the means for “creating an engine thrust differential” to be as a result of “different power settings.”

As a result, arguments made with reference to claims 1 and 45 are also thought to be applicable to claim 35. For at least these reasons, claim 35 is thought to be patentably distinguishable over Bacon and separately patentable from the other claims of Group IV.

**B. The Examiner Improperly Relied on Appellant's own Disclosure to Reject Claims 4-6, 8, 37 and 44 under 35 U.S.C. § 103(a).**

In the Final Office Action, the Examiner acknowledges that "Bacon does not expressly teach the first and second jet engine being substantially identical," but then attempts to address this deficiency with "Applicant's own disclosure on page 2 and 3, paragraphs [0006] to [0008]" (see Final Office Action at page 3). Use of AOD in this manner is contrary to Federal Circuit case law.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference (as modified) must teach or suggest all the claim limitations. The teaching or *suggestion* to make the claimed combination and the reasonable expectation of success *must both be found in the prior art and not based on applicant's disclosure*. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As an initial matter, it is respectfully submitted that "*Applicant's own disclosure*" (i.e., *the Summary of the Invention*) *does not qualify as prior art under any section of 35 U.S.C. § 102*. Furthermore, the paragraphs identified by the Examiner have nothing to do with the use

of substantially identical engines. Trying to read the Examiner's rejection in the most reasonable light possible, it may be the Examiner intended to rely on paragraphs [0009] to [0011] of the Summary of the Invention of the above-captioned patent application; however, this does not resolve the inherent problem of the Examiner's *hindsight analysis* that effectively uses Appellant's own teaching in the above-captioned patent application as the motivation to do what is claimed by Appellant in claims 4-6, 8, 37 and 44.

Alternatively, it may be that the Examiner has read paragraph [0008] of Applicant's Summary of the Invention as some kind of admission regarding the state of the prior art; however, even this strained interpretation of the Examiner's rejection fails under close scrutiny of the portion of AOD relied upon. In general, the portion of AOD relied upon by the Examiner to support his 35 U.S.C. § 103(a) rejection is attempting to summarize various features of the new invention, but in the language and context of the prior Bacon patents. This is clearly illustrated with reference to paragraph [0008] of the above-captioned patent application where the following introductory statement is made: "[u]nder the *terminology* of the prior [Bacon] patents a 3X combination was discussed..." (emphasis added). Consequently, the remainder of the paragraph and subsequent paragraphs are not an admission regarding what may or may not have been disclosed in the earlier Bacon patents, but rather represent new disclosures beyond the disclosures of the prior Bacon patents, but using terminology consistent with those prior patents.

At any rate, it is not the undersigned's burden to attempt to find a reasonable interpretation or justification for the Examiner's use of AOD to reject claims 4-6, 8, 37 and 44. In contrast, it is the Examiner's responsibility to put forth *prima facie* evidence of

unpatentability. For at least these reasons, the undersigned respectfully submits the Examiner's 35 U.S.C. § 103(a) rejection is improper and should be reversed.

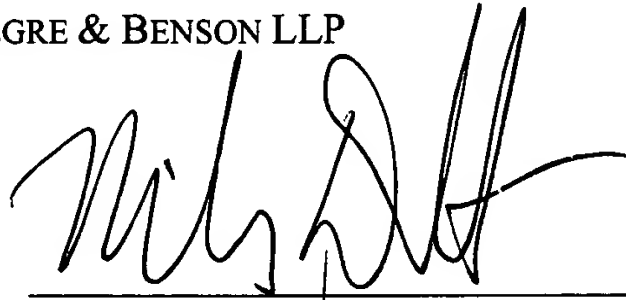
#### CONCLUSION

In multiple instances, the Examiner completely failed to establish a *prima facie* case to support his 35 U.S.C. § 102(b) rejections. Bacon does not teach or reasonably suggest at least one expressly recited claim limitation of each of the claim Groups. The Examiner has improperly attributed teachings and/or functionality to Bacon that are unsupported by, inconsistent with and/or outside the scope of the written description of Bacon. Meanwhile, in the Examiner's obviousness rejection, the Examiner improperly attempts to address the deficiencies of Bacon with AOD, which is prohibited by Federal Circuit case law. For the aforementioned reasons, the Examiner's rejections should be reversed, and claims 1, 3-10 and 34-45 should be allowed.

The appropriate fee of \$375.00 for the filing and consideration of this Appeal Brief, along with a two (2) month extension is enclosed. Should any additional fee be required, the Commissioner is authorized to charge our Deposit Account No. 06-0029 and requested to notify us of same.

Respectfully submitted,

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Date: May 17, 2004

DNVR1:60264557.02

**APPENDIX OF CLAIMS**  
**37 C.F.R. § 1.192(c)(9)**

The claims on appeal read as follows:

- 1     1.     A twin-engine jet aircraft configuration, comprising:
- 2                 (a)     an airframe having a centerline along its longitudinal axis;
- 3                 (b)     a first jet engine mounted within a plane vertical to the centerline;
- 4                 (c)     a second jet engine mounted within said plane vertical to the centerline;
- 5                 (d)     each of said first and second jet engines having a thrust adequate to
- 6     takeoff, climb, cruise and land the aircraft at full gross weight without use of the other jet
- 7     engine;
- 8                 (e)     one of said first and second jet engines having a maximum thrust greater
- 9     than the maximum thrust of the other of said first and second jet engines, said thrust
- 10    differential created by a different power setting on one of two otherwise equally powered
- 11    jet engines.
- 1     3.     The twin-engine jet aircraft configuration of claim 1, wherein a combined thrust of said
- 2     first jet engine and said second jet engine is substantially within the range of two times to
- 3     four times that of a single conventional twin aircraft engine.

- 1 4. A jet aircraft configuration comprising:
- 2 (a) an airframe having a centerline along its longitudinal axis;
- 3 (b) a first jet engine mounted to the airframe and intersected by a plane
- 4 vertical to the centerline; and
- 5 (c) a second jet engine mounted to the airframe and intersected by the plane
- 6 vertical to the centerline, the second jet engine being substantially identical to the first jet
- 7 engine but having a lesser maximum thrust than the maximum thrust of the first jet engine
- 8 as a result of limiting the second jet engine's maximum thrust capability.
- 1 5. The jet aircraft configuration of claim 4, wherein the second jet engine's maximum thrust
- 2 capability is limited by down-rating the second jet engine.
- 1 6. The jet aircraft configuration of claim 4, wherein each of the first jet engine and the
- 2 second jet engine have a thrust adequate to takeoff, climb, cruise and land the jet aircraft
- 3 at full gross weight without use of the other jet engine.
- 1 7. A jet aircraft configuration comprising:
- 2 (a) an airframe having a centerline along its longitudinal axis;
- 3 (b) a pair of equally powered jet engines mounted to the airframe and
- 4 intersected by a plane vertical to the centerline to produce centerline thrust; and
- 5 (c) a first jet engine of the pair of equally powered jet engines having a lesser
- 6 maximum thrust capability than the maximum thrust of the other jet engine of the pair of
- 7 equally powered jet engines as a result of limiting the first jet engine's maximum thrust
- 8 capability.

- 1 8. The jet aircraft configuration of claim 7, wherein the first jet engine's maximum thrust  
2 capability is limited by down-rating the first jet engine.
- 1 9. The jet aircraft configuration of claim 7, wherein each of the first jet engine and the  
2 second jet engine comprises a main jet engine.
- 1 10. The jet aircraft configuration of claim 7, wherein the centerline thrust produced by the  
2 pair of equally powered jet engines is symmetrical.
- 1 34. A jet aircraft configuration comprising:  
2 (a) an airframe;  
3 (b) an engine means, including two or more jet engines mounted to the  
4 airframe, for producing centerline thrust; and  
5 (c) a means for creating an engine thrust differential between the two or more  
6 jet engines during one or more flight segments in which the two or more jet engines all  
7 remain operating.
- 1 35. The jet aircraft configuration of claim 34, wherein the means for creating an engine thrust  
2 differential comprises setting the two or more jet engines to run at different power  
3 settings.
- 1 36. The jet aircraft configuration of claim 34, wherein the means for creating an engine thrust  
2 differential comprises limiting at least one of the two or more jet engines from its  
3 maximum thrust capability.
- 1 37. The jet aircraft configuration of claim 36, wherein said limiting is accomplished by  
2 down-rating the at least one of the two or more jet engines.



- 1 38. The jet aircraft configuration of claim 34, wherein one of the at least two jet engines has a  
2 maximum thrust greater than the maximum thrust of the other of the at least two jet  
3 engines.
- 1 39. The jet aircraft configuration of claim 34, wherein the at least two jet engines have  
2 substantially the same maximum thrust capability.
- 1 40. The jet aircraft configuration of claim 34, wherein a combined actual thrust of the at least  
2 two jet engines is substantially within the range of 1.6 times to 4 times that of a single  
3 conventional twin aircraft engine.
- 1 41. The jet aircraft configuration of claim 40, wherein the combined effective thrust of the at  
2 least two jet engines is greater than or equal to that of the single conventional twin  
3 aircraft.
- 1 42. A jet aircraft configuration comprising:  
2 (a) an airframe having a centerline along its longitudinal axis;  
3 (b) a first jet engine mounted to the airframe and intersected by a plane  
4 vertical to the centerline; and  
5 (c) a second jet engine mounted to the airframe and intersected by the plane  
6 vertical to the centerline, the second jet engine having a lesser or equal thrust capability  
7 than the first jet engine as a result of limiting the second jet engine's maximum thrust  
8 capability.
- 1 43. The jet aircraft configuration of claim 42, wherein the second jet engine's maximum  
2 thrust capability is limited by down-rating the second jet engine.

1 44. A jet aircraft configuration comprising:

- 2 (a) an airframe having a centerline along its longitudinal axis;
- 3 (b) a pair of jet engines mounted to the airframe and intersected by a plane
- 4 vertical to the centerline to produce centerline thrust;
- 5 (c) each of the jet engines of the pair of jet engines being substantially
- 6 identical but have differing maximum thrust capabilities as a result of limiting the
- 7 maximum thrust capability of at least one of the jet engines of the pair of jet engines; and
- 8 (d) each of the jet engines of the pair of jet engines capable of responding to
- 9 independent thrust control during one or more flight segments.

1 45. A twin-engine jet aircraft configuration comprising:

- 2 (a) an airframe having a centerline along its longitudinal axis;
- 3 (b) a first jet engine mounted to the airframe and intersected by a vertical line
- 4 orthogonal to the centerline;
- 5 (c) a second jet engine mounted to the air frame and intersected by the
- 6 vertical line;
- 7 (d) one of said first and second jet engines having a maximum thrust greater
- 8 than the maximum thrust of the other of said first and second jet engines, said thrust
- 9 differential created by a different power setting on one of two otherwise equally powered
- 10 jet engines.